

### REMARKS

Claims 1-4, 8-13 and 21-37 are pending. Of the pending claims 1-4, 8-13 and 21-37, claims 1, 11, 23 and 29 are independent. By virtue of this response, claims 1, 2, 11, and 29 are amended. Claims 5-7 and 14-20 are canceled, or were previously canceled. No new matter has been added.

Applicant thanks the Examiner for the indication that claims 23-28 are allowed, and the indication of allowable subject matter in claims 21, 22, and 31-34.

#### Independent Claims 1 and 11 and Those Claims Depending From Them

The Office Action rejects independent claims 1 and 11 as obvious over U.S. Patent No. 3,368,814 (Kolwicz) in view of U.S. Patent No. 5,769,424 (Kelly), U.S. Patent No. 5,031,919 (Dixon), and U.S. Patent No. 5,577,733 (Downing). However, these references, either singly or in combination, do not render obvious independent claims 1 and 11, or the claims that depend from them, because the references do not describe or suggest all of the claim limitations.

Specifically, as amended, independent claim 1 recites, in part, that the claimed game includes "a target area defining multiple, separate apertures, each aperture located in one of the multiple target sections" and "an optical detection system to detect which one of the multiple, separate apertures the playing piece passed through." (Emphasis added.) The claimed optical detection system includes "at least two optical detectors, each optical detector located near an associated one of the apertures, and a common optical emitter arranged such that a beam emitted from the emitter is received by the at least two optical detectors."

Similarly, amended independent claim 11 recites, in part, that the claimed game includes "a target area defining multiple, separate apertures, each aperture located in one of the multiple target sections" and "means for detecting which one of the multiple, separate apertures the playing piece passed through." (Emphasis added.) The claimed means for detecting includes "at least two optical detectors, each optical detector located near an associated one of the apertures, and a common optical emitter arranged such that a beam emitted from the emitter is received by the at least two optical detectors."

The Office Action relies on Kelly and Downing to show the claimed optical detection system and the claimed means for detecting:

Regarding the ball detecting system, Kelly discloses that the use of optical detectors as ball detectors is old and well-known in the gaming art. See column 7, lines 34-60. Although Kelly does not explicitly recite an optical detection system with a single emitter in combination with a plurality of optical detectors, because Downing teaches that these two types of detecting systems were art-recognized equivalents at the time of the invention in those applications where it is immaterial how the ball is detected as it passes through a target hole, one of ordinary skill in the art would have found it obvious to substitute one well-known optical detecting system for another. See Downing at Figure 3 and Figure 18.

Office Action, Page 2, Line 21 to Page 3, Line 11.

However, even if, as asserted, these references teach that optical detectors may be used as ball detectors, and that a multiple-emitter system is equivalent to a single-emitter system, these references fail to describe or suggest an optical detection system that detects which one of multiple, separate apertures a playing piece passed through. Similarly, they fail to describe or suggest a means for detecting which one of multiple, separate apertures a playing piece passed through. Rather, at most, they show optical detection systems that detect where an object is located in a single opening, or the location at which an object passed through a single opening.

In particular, Kelly describes a game in which balls are consecutively stacked in a single channel 40. Kelly's game uses multiple optical emitters and multiple optical detectors, with one of each for each position in channel 40, to detect a location of the ball in the single channel 40. Kelly, Col. 10, Lines 32-36 ("a number of sensors 92 [] are positioned within the guide walls [and each sensor 92 includes] an emitter 92a on one side of channel 40 and a detector 92b on the other side of the channel.")

Thus, even if Kelly teaches the use of optical detectors as ball detectors, as asserted in the Office Action, Kelly does not describe or suggest an optical system used to detect which one of multiple, separate apertures a playing piece passed through. Rather, Kelly describes using an optical detection system to detect the location of a ball in a single channel.

Similarly, Downing's system uses optical detectors to determine the location at which a bullet passed through a single opening of a light panel. For example, and with reference to Fig.

16, Downing describes a light panel 600 that includes a frame that forms a single opening in the middle of the frame. Downing, Col. 16, Lines 36-47. A single optical emitter E is located in one side of the frame and emits a fan shaped beam P across the opening. Id. The beam is received by multiple detectors D located a side of the panel opposite from the emitter E. Id. Likewise, an optical emitter e is located on another side and emits a fan shaped beam p across the opening. Id. The fan shaped beam p is received by detectors d located in the side panel opposite from emitter e. Id.

This arrangement of optical detectors and emitters, however, is used to determine the location at which a bullet passed through the single opening of the light panel, not which one of multiple apertures a playing piece passed through. Referring to Fig. 1, such a light panel (labeled 14 in Fig. 1) is placed in front of a target screen 12. Downing, Col. 10, Lines 25-36; Col. 10, Lines 43-47. A target is projected on the screen 12 and a user fires a bullet at the target. As the bullet passes through the light panel 14, the optical system detects the bullet's location in the single opening of the light panel, which is then used to determine if and where the bullet struck the target projected on the screen. Downing, Col. 10, Lines 25-36. Thus, even if Downey teaches that a multi-emitter system is equivalent to a single-emitter system, Downey does not describe or suggest using an optical detection system to detect which one of multiple, separate apertures a playing piece passed through.

Kolwicz and Dixon simply show mechanical switches located beneath each aperture, and therefore do not describe or suggest an optical detection system (or means for detecting) that detects which one of multiple, separate apertures a playing piece passed through, where the optical detection system (or means) includes at least two optical detectors and a common optical emitter.

Therefore, Applicants submit that Kolwicz, Kelly, Dixon, and Downing, either alone or in combination, do not describe or suggest all of the features of independent claims 1 and 11. Accordingly, independent claims 1 and 11, and those claims that depend from them, are allowable over Kolwicz, Kelly, Dixon, and Downing at least for the foregoing reasons.

Independent Claim 29 and Those Claims Depending From It

The Office Action rejects independent claim 29 as obvious over Kolwicz in view of Kelly, Dixon, and Downing. However, these references, either singly or in combination, do not render independent claim 29 obvious because the references do not describe or suggest all of the claim limitations.

Applicant submits that none of these references describe or suggest a game in which “a playing piece . . . passes unimpeded through [a] corresponding aperture of [a] target section directly into the passage common to the [multiple] apertures,” and in which “an optical detection system [detects] which aperture the playing piece passed through to directly enter the passage common to the apertures,” as recited in claim 29. (emphasis added).

The Office Action equates the base area 15 of Kolwicz to the claimed common passage. However, in Kolwicz, the balls do not pass directly into the base area 15. Rather, the balls first pass into the separate channels 26, and then into the base area 15. Kolwicz, col. 3, lines 30-36.

Kelly does not even describe or suggest a playing piece passing through an aperture. See Kelly in its entirety. In Dixon, the balls passing into apertures 86 are impeded by the mechanical target strike sensors 38. Dixon, col. 3, lines 16-20. Downing only describes a single opening in the light panels, and therefore does not describe or suggest a passage common to multiple apertures. See Downing in its entirety.

Thus, none of these references describe or suggest a game in which a playing piece passes through an aperture unimpeded and directly into a passage common to the apertures of the game, and in which an optical detection system detects which aperture the playing piece passed through to directly enter the passage common to the apertures.

Applicant submits that claim 29, and those claims that depend from it, are allowable over Kolwicz, Kelly, Dixon, and Downey. Accordingly, Applicant requests that the rejection of these claims be withdrawn.


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